machine are then passed across the intervening air, when it is found that the level rises at the negative and falls at the positive pole. There is, therefore, apparently an actual transport in the direction conventionally agreed upon as the direction of the current. M. Gernez is inclined to attribute this phenomenon to an electrical transport of the liquids along the moistened surfaces of the tubes. Pure alcohol distils over thus at a rate three times as great as that of water, but a mixture of alcohol and water in equal parts at a less rate than pure water. The rapidity of the distillation is increased by the addition of any soluble salt or of a few drops of sulphuric acid or of ammonia solution. No appreciable amount of distillation takes place with bisulphide of carbon, tetrachloride of carbon, or with turpentine. M. Gernez, however, does not think that there is any assignable relation between the conductivity of a liquid and its rate of electro-convective evaporation; nor does he think that there is any necessary connection between this phenomenon and that discovered by Porret of the electric endosmose of liquids across diaphragms of various kinds.

GEOGRAPHICAL NOTES

AT the last meeting of the Russian Geographical Society, in the section of Physical Geography, M. Rylcke communicated the results of his precise measurements on the levels of the Baltic and of the Black Sea. These measurements were begun in 1877, by order of the General Staff, according to the resolutions of the Brussels Congress. Accurate measurements in the ports of the Baltic have proved undoubtedly that the level of the sea at Cronstadt is, by nearly two feet, higher than at Reval, and that its height decreases regularly from north to south, this conclusion being fully supported by Prussian measurements at Memel and at Kiel. For a comparison of the level of the Baltic with that of the Black Sea the necessary computations are not yet advanced enough to yield trustworthy results.

IN his last paper on the Agomes Islands (*Isvestia*, 1879, p. 37) M. Miclucho-Maclay says that here he happened to determine the dimensions of the heads only of fourteen men, and that the so-called "index of the breadth" varied from 69·6 to 81·3; it was thus nearly the same as on the Taui Islands (70·5 to 84·5), where the traveller has done no less than 119 measurements, and does not much differ from what was seen of the Papuans of New Guinea, whose "index" varies from 62·0 to 86·4. According to this wide variation of the "indexes," M. Maclay affirms that we have no right to describe the heads of Melanesians as well as those of the Papuans as dolichocephalic, but rather as mezocéphalic; and that the form of the head must not be considered as a proof of a race-distinction between Negritoes and Papuans, as both Melanesians and Papuans display an obvious tendency to brachycephalism, whilst this last was formerly considered as a distinctive feature of the Papuans from the natives of the Philippine Islands. He considers also that within the same races we shall always find both forms of heads, and that a true classification of human races cannot be established on this sole feature; it must be based on a thorough study of the whole of the comparative anatomy. A few measurements on living subjects, however accurate, cannot give the necessary solid bases for a scientific classification.

ACCORDING to a telegram received in Paris from Sierra Leone, two Frenchmen, MM. Zweifel and Moustier, have at length discovered the sources of the River Niger, a feat which has hitherto baffled all explorers. The party appear to have been recently instructed by their employer, M. Verminck, of Marseilles, to explore the Niger for both scientific and commercial purposes; and accordingly, starting from Sierra Leone and following the course of the Rohelle, they reached the foot of the Kong Mountains. By adroit treatment of the hostile tribes at this point, where foreigners had always been refused passage, they were allowed to pass the mountains and explore the three streams which, uniting after a short distance, form the River Niger.

BEFORE concluding his recent explorations in South America, Dr. Crevaux made two attempts to ascend the Ica or Putumayo tributary of the Amazon. Having failed the first time, he ascended the main stream to Tabatinga, on the frontier of Peru and Brazil, and then returned to Para. He there obtained means to enable him to carry out his original intention, and at the second attempt succeeded in ascending the Ica to Cnembe, to the north of Cotopaxi, on the frontier of Bolivia and Ecuador. Starting from this place on May 16, Dr. Crevaux reached the foot of the Andes in eight days. Thence continuing his route towards the north, he arrived at the sources of the Japura after sixteen hours' march. After experiencing great hardships, and hostility on the part of the natives, he reached the Amazon again on July 9, arriving at Para on July 24. He has brought back with him much information interesting alike from a geographical and ethnographical point of view, as well as a collection of plants, which are expected to prove useful as medicines.

IN publishing an interesting letter from its special correspondent with the Russian expedition against the Tekke Turkomans, the *Daily News* states that the "nature of the ground along the course of the Attrek from the Caspian Sea has never been accurately described from personal observation." Without wishing to undervalue this and other letters from the same source, we may be permitted to point out that the ground had been previously examined by a party under General Llomakin, and that Sir Henry Rawlinson, in his paper on the "Road to Merv," read before the Geographical Society on January 27, quoted at length from Russian newspapers a description of this very route by a member of the expedition. A summary of the letters, giving an account of this expedition, which had been addressed to the *Moscow Gazette*, also appeared in NATURE, vol. xix. p. 271.

A LETTER from Herr Hildebrandt, dated Nossibé (Madagascar), states that he has visited Beravi, where the unfortunate traveller, Dr. Chr. Rutenburg, was murdered some time ago. Hildebrandt erected a stone monument on the spot; the body, however, could not be found, in spite of the most assiduous inquiries, the murderers having thrown it into a mountain torrent. Hildebrandt has photographed the spot, and sends a copy to Bremen, accompanied by the last diary and stenographical notes of Rutenburg.

THE Geographical Society of Algiers has nominated for its president M. MacCarthy, an explorer of the Algerian Sahara, who is settled in Algiers, and has been appointed librarian of the National Library of Algiers. This Society has been divided into three sections: Political Geography, Economical Geography, and Physical Geography.

THE Belgian African Society has received letters from Zanzibar, according to which MM. Popelin and Van der Heuvel had arrived at Mpwapwa on August 15 and at Chunyu on September 2. They were to leave the latter place on September 3, and to penetrate into the Ugogo district. At Mpwapwa they met the elephant caravan led by Carter. Each elephant carried about 10 cwt. The march was performed most satisfactorily. In the districts where the tsetse flies abound, the animals were often covered by them without feeling any the worse for it. Only one elephant died through change of nourishment, the whole caravan being fed with what the country offered. M. Dutalis, who suffered from a severe attack of fever, has returned to Europe.

THE Geographical Society of Munich has conferred the title of Honorary Members upon Prof. Nordenskjöld, Dr. Joseph Chavanne (Vienna), and Dr. Emil Holub (Prague). The reception of the latter upon his return to Prague was most enthusiastic. He had been absent for over seven years. The Vienna Geographical Society has elected the following gentlemen as Honorary Members:—Prof. Ujfalvy (Paris), General Kauffmann (Tashkend), Dr. E. Holub (Prague), and Prof. Arendts (Munich). The last-named gentleman has also been nominated Corresponding Member of the Paris Society for commercial geography.

A GENERAL "Geographentag" will be called at Berlin during the summer of 1880. Its special object will be the consideration of plans for the formation of a great German "Gesellschaft für Erdkunde." The idea is not a new one, but projects for the new General Society have already been mooted upon several occasions. At the recent Karl Ritter celebration at Berlin, a "commission" was appointed and charged with the working out of certain preliminaries referring to the subject. The commission is formed of Dr. Nachtigal (Berlin), Prof. Neumayer (Hamburg), Prof. Bruhns (Leipzig), Prof. Rein (Marburg), and Dr. Roth (Dresden)

UNIVERSITY AND EDUCATIONAL INTELLIGENCE

OXFORD.—In a congregation held on Tuesday, November 18, the amendments to the proposed statute to confer degrees in natural science were taken into consideration. The proposed statute made Greek an optional subject in the natural science

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curriculum. It appeared from counsel's opinion that the proposed degree would not carry with it the rights and privileges of the master of arts degree. On the latter ground opposition was made to the statute by a considerable portion of those engaged in teaching natural science at Oxford. Prof. Odling had issued a memorandum, extensively signed by residents interested in science, in which he had explained his reasons for opposing the statute. The statute, by completely separating the faculties of arts and natural science, would allow no honour student in one faculty to become an honour student in the other without beginning in the new faculty *ab initio;* and no honour student in the faculty of natural science could fall back, as at present, on the ordinary pass degree. The broader question of lowering the value of natural science degrees by putting them on a different footing from degrees in arts, was not discussed in congregation on Tuesday; but Dr. Magrath's amendment to reject the whole statute except the preamble, was passed by a vote of fifty-four against forty-eight. The whole subject will thus have to be rediscussed on a future occasion.

The examination in the Honour School of Natural Science will commence next Monday, November 24.

CAMBRIDGE.—The Cambridge women students add no unimportant quota to the numbers in residence, numbering something lik 160 or 170 this term. At Girton College there are over fifty students, including about six of the first year who purpose studying natural science. They have a good chemical laboratory, under Miss Herschel's superintendence, also a library which includes many valuable presents of books and apparatus. There are now eleven lecture- and class-rooms, and a good hospital and nurse's room have been built, capable of being entirely detached from the rest of the College. Miss Tomlinson's success in winning an entrance scholarship at the London School of Medicine for Women, and entering for the London Medical Examinations, will doubtless tend to show that a Cambridge course in science is no bad preparation for women as well as men before proceeding to medical degrees.

The Newnham College Association will shortly have two houses of residence facing one another, together with a complete set of lecture-rooms and a chemical laboratory. There are eighty two students in residence at Cambridge who have come for the lectures to women, besides about twenty who attend the lectures each term, being residents, school-mistresses, &c. Miss Lawrence, who gained marks equivalent to a second-class when informally examined in the last Natural Sciences Tripos, remains in residence, and demonstrates for the lady-students who attend Dr. Michael Foster's and Mr. Balfour's lectures. Mr. Vines's lectures on Vegetable Physiology are open to ladies who obtain special permission.

Mr. Freeman, of St. John's College, has given to the Women's Association a quantity of valuable electrical apparatus which will be used in giving instruction in experimental physics. Mr. R. T. Wright, on leaving Cambridge, resigns his active work for the Association as secretary, and pending the formation of the Newnham College Company, Miss M. G. Kennedy is appointed secretary to the Association for the remaining period of its existence. Nine scholarships have been awarded by the Association on the last higher local and other examinations, and over 700*l.* thus given or lent to students in one year. About 1,000*l.* has been paid to the Association during the year by students attending its lectures. As soon as the memorandum and articles of association of Newnham College are complete, a copy will be kept by Mrs. Bateson at St. John's Lodge, for inspection by any member of the existing Association.

A noteworthy entertainment of the British Medical Association by Cambridge University, town, and county, may be expected next August, when Prof. Humphry will preside. The president's position will be very conspicuous, for he is now, by Mr. Lestourgeon's retirement, senior surgeon and clinical lecturer on surgery to the Cambridge (Addenbrooke's) Hospital and Medical School, as well as professor of anatomy. A public meeting was held on Friday, the 14th, in the Cambridge Guildhall, at 2.30, under the presidency of the Vice-Chancellor (Dr. E. H. Perowne, Master of Corpus Christi College), when Dr. Humphry made a statement of the objects of the Association and the proposed arrangements for the meeting. His son, Mr. A. P. Humphry, one of the Esquire Bedells, is honorary secretary of the Local Executive Committee. Most probably at least a thousand members will attend the meeting. Dr. Michael Foster will deliver the address in Physiology, and Mr. Timothy Holmes that on Surgery. Dr. Paget, Regius Professor of Medicine, will preside over the section of Medicine, he having been president of the Association itself when it last met in Cambridge; and Sir James Paget will be president of the newly constituted section of Pathology. Dr. J. B. Bradbury is to deliver the address in medicine at the meeting; he holds the Linacre Lectureship, delivering lectures on pathology, is medical lecturer of Gonville and Caius College, and one of the physicians to Addenbrooke's Hospital, and took a distinguished position in the Cambridge Natural Sciences Tripos.

Mr. G. B. Atkinson, Trinity Hall, Cambridge, has been appointed secretary of honour examinations.

We are glad to learn that mathematics and geology are now studied by more students who enter the Cambridge Higher Local Examinations. In the examination in mathematics in June, the candidates showed better style and appreciation of mathematical ideas. All the subjects gain favourable reports, and in astronomy one candidate did remarkably well. The work in the differential and integral calculus was good, the introduction of this paper having been successful. In botany there was much guesswork and little evidence of histological work by candidates. One of the candidates, placed first in zoology, sent up admirable work in botany. Some candidates did very well in practical chemistry. The examiner's report on physiology, now first introduced as a separate subject, is on the whole favourable; only one set of papers on physics was sent up. In 1879, Group C (Mathematics) had 60 candidates, of whom 19 failed and 8 obtained a first class; in Group E, 73, of whom 35 failed and 4 obtained a first class.

The Report of the Board of Natural Sciences Studies, which we referred to last week, was rejected by 46 to 26 votes. Prof. Paget and Mr. Bettany issued a fly-sheet complaining that the subjects of examination were now too numerous and extensive; encouraging candidates to an injurious amount of memory-work in attaining "general knowledge and proficiency;" and that there should now be a Biological and a Physical Tripos. Mr. Sedley Taylor and Mr. Vines, as well as Prof. Dewar and Mr. Balfour, object to the advance of human anatomy to so conspicuous a place in the Tripos Dr. Humphry considers the recognition of human anatomy in the Tripos not greater than it deserves. However, he would now prefer a "Medical Tripos."

SCIENTIFIC SERIALS

Journal of Anatomy and Physiology, Normal and Pathological, vol. xiv. part i., October.—Drs. Gibson and Malet, on a pre-sternal fissure, uncovering the base of the heart, pl. 1. —Dr. W. Ostler, case of congenital and progressive hypertrophy of the right upper extremity.—Prof. Flower and Dr. Garson, the scapular index as a race character in man.—Dr. W. Allen, the varieties of the atlas in the human subject and the homologues of its transverse processes, pl. 2.—Prof. Cleland, note on the foregoing.—Dr. Creighton, the infection of the connective tissue in scirrhous cancers of the breast.—Dr. Watson, the homology of the sexual organs, illustrated by comparative anatomy and pathology.—Prof. Bridge, on the pori abdominales of vertebrata.—Prof. Turner, on the pori abdominales in some sharks.—Prof. Turner, a description of a cleft sternum.—Dr. J. Barlow, the physiological action of ozonised air.—Prof. Charles, on the mode of propagation of nervous impulses.—Dr. Cook, on a logwood staining solution.—Dr. Dobson, case of the development of hair on the eyeball of a dog.—Dr. Osler, on Giacomini's method of preserving the brain.—Anatomical notes.

THE recent numbers of the *Scottish Naturalist,* which has now been in existence for nine years, show no falling off from the interest of the earlier ones. In addition to the descriptive papers and lists of localities in the various departments of natural history, we find in the last number a paper on the Gaelic names of plants, one on the effects of the past winter and present summer on hard-wooded plants, and one on the auriferous quartz of Wanlockhead. The list of Scottish insects by experts in the various sections of entomology is still continued in each number. The number for October contains an appreciative notice of the late excellent naturalist, Sir Thomas Moncreiff, Bart., president of the Perthshire Society of Natural Science.

Royal Society of Tasmania, Papers and Proceedings of, for 1877.—Hobart Town, 1878.—Among the more important papers are the following:—F. W. Hutton, on some South Australian Polyzoa (describes several new species from the shores of St. Vincent's Gulf).—Rev. J. E. T. Wood, census, with brief descriptions of the marine shells of Tasmania and the adjacent

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